

## ABSTRACT

A cavity filter assembly is provided with at least one structural cavity wall comprising a circuit board. The circuit board may also contain other circuits and circuit elements such as trim capacitors, inductors, low noise amplifier circuits and power amplifiers that are part of the filter's function. Input and output coupling structures and connectors may also be provided on the circuit board. The circuit board may contain inter-stage coupling circuits, signal traces, and coupling pads/structures. Further embodiments are provided that incorporate test connectors and directional couplers on the circuit board. In yet other embodiments the filter's electrical characteristics are tunable with trim elements mounted on the circuit board, such as capacitors or inductors, in either mechanical or electrical manner. The filter's electrical characteristics may also be tunable with mechanical elements mounted through the circuit board.